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(54) **Device for irrigation of the nasal cavities for home use**

(57) Device for the irrigation of the nasal cavities for home use comprising a re-usable container (Fig. 1 no. 3), kept high, hung to a hook or to a sucker or to a rod (fig. 1 no.4), from whom through a conductor pipe (Fig.

4 no.3a) therapeutic solution flows through a nozzle (Fig. 1 no. 1 and Fig. 2 and 3) with a truncated-cone shape into a nostril. On the conductor pipe a roller valve is applied (fig. 1 no.2), which can slide along the pipe to regulate, interrupt and open again the flow.

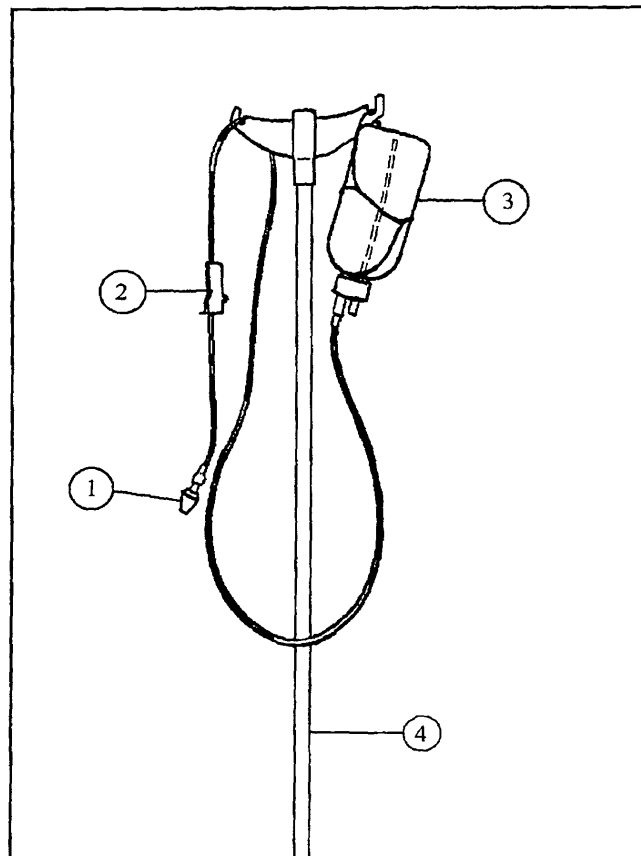


FIG. 1

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Description

[0001] It is object of the present invention a device for the irrigation of the nasal cavities for home use. There are not devices, at the actual state of the technology, which let to do comfortably in your own home nasal irrigations, which are re-usable, whose flow is comfortably adjustable through the use of a valve and which can easily contain therapeutic solution at the optimal temperature.

[0002] There are in art devices for the washing of the nasal cavities, but they are lacking in the technical characteristics above mentioned. Particularly there is a device for the irrigation of the nasal cavities patented by Mr Mezzoli Giorgio (WO9629044 (A1) and ITBO950126) which, differently from the present invention, has the following advantages:

it is disposable so it does not let to re-use the container for the solution of the nasal irrigations;
the costs of use can become expensive and then not for anyone, in case you want to use it often, as it is advisable to do;
it does not let, during the heating of the solution, to take it easily to the optimal temperature (37°C), because the solution itself is *ab origine* (from the beginning) closed in a container;
by having to heat the solution contained in the sealed pocket, the necessary time to do an irrigation exceeds plentifully the five minutes, time difficult to find in the actual frantic life;
it is not provided with a valve for the opening, the closing and the regulation of the flow of the solution;
it increases the rubbish pollution.

[0003] There are then two Chinese patents [CN2702733 (Y), CN20042008284U 20040317] and [CN2411005 (Y), CN19992042480U 19990903] whose claims and summary are not available in Italian language, but from their drawings it is easy to guess their different realization and their use, much more ingenious and complicate.

[0004] The present invention is placed among the devices which make easy and repeatable by everyone in your own home the therapeutic washing or hygiene of the nasal cavities, and it is finalized to the prevention and at the cure of sinusitis, colds, rhinorhea, allergic rhinitis and halitosis (through the removal of mucus, pollutants and allergens breathed). The flow of the solution can be regulated with a simple valve (Fig. 1 no.2) while the optimal temperature can be measured by a thermometer.

[0005] The above mentioned device provides for the use of a container similar to the device to gurgle the oxygen (Fig. 1 no.3). It is a turned over plastic bottle where the water solution and salt is inserted (sodium chloride) or other solution suitably produced and prepared for the care of the nasal pathologies.

[0006] The bottle above mentioned (Fig. 1 no.3) is con-

nected to a conduction pipe of the liquid (Fig. 4 no. 3a), which is connected to a nozzle at the other end.(Fig. 1 no.1 and Fig. 2 and 3).

[0007] The stopper of the container bottle has two small pipe: the first (Fig. 4 no. 3a) is useful for connecting the container to the conductor pipe and the second (Fig. 4 no.3b) for letting the air to enter the bottle.

[0008] The entering of the air is very important because it creates the necessary pressure to continue the regular down-flow of the solution in the conduction pipe.

[0009] On the conductor pipe is applied a Roller valve (Fig. 1 no.2), to open, close and regulate the flow of the solution.

[0010] This trick is very important because it lets to break off at any time the solution flow and to start it again later or to modify the flow according to the particular necessity of the user.

[0011] This valve (Fig. 1 no. 2) is given so that it can slide along the pipe (Fig. 4 no.3a), so that the user can place it in the point more comfortable for him/her during the washing.

[0012] At the end of the conduction pipe, a nozzle is applied (Fig. 1 no. 1 and Fig. 2 e Fig. 3), so characterized: it has a central hole along its whole length, at an end it is connected to a conductor pipe from whom the solution arrives, while the other end, characterized with a truncated-cone shape, is inserted in the nostril to let the solution enter the nose.

[0013] The container is hung high according to the position of the user: or to a hook hung at the wall or to a sucker or to a rod for the drip (Fig. 1 no.4). In this way the solution slides for effect of the force of gravity.

[0014] The capacity recommended for the container of the therapeutic solution is of 500 ml but it can also be different according the necessity of the user.

[0015] All the elements which compose the device are made of plastic, and then, already used in medical field:

- the nozzle (Fig. 1 no.1): in the thermal establishments for the nasal irrigations;
- the Roller valve (Fig. 1 no.2): with the dispensers for the drops;
- the container of the solution (Fig. 1 no.3): to gurgle and humidify the oxygen in bombs for therapeutic use;
- the thread-like element (Fig. 4 no.3c) which lets to hang the bottle: to hang the bottle of physiological solution to the rod for the drip.

[0016] The device for the irrigation of the nasal cavities object of the present patent request works just by using the hot water of the tap taken to 37°C. After putting in the container the quantity desired of common sea salt, from 1 to 2 tea spoons for each half litre water, you make the water slide till to reach the right temperature (37°C) and then you fill the container (fig. 1 no.3). Otherwise you can preheat the therapeutic solution in a kettle and after verifying the temperature with a thermometer you can poor

it in the container.

[0017] In the case of Mr Giorgio Mezzoli's invention instead, it is difficult to obtain the optimal temperature (37°C) of the solution because contained in a sealed pocket.

[0018] It is to remember that the container (fig. 1 no. 3), differently from the other existing inventions, is always re-usable and, if you desire it, it can be sterilized by boiling.

[0019] The user, thanks to the invention, which is so portable, can sit down in front of a washbowl or of a basin and by bending and bowing the head to a side, can start to use it: he inserts the nozzle (Fig. 2 and Fig. 3) in the nostril which is more high and, by opening the valve, (Fig. 1 no. 2) it lets the solution, which from the conductor pipe flows to the nozzle, enter the nose and run out through the nostril which is more down (Fig. 5 and Fig. 6). By keeping the mouth lightly open to breath, the user will repeat this job by bending and bowing the head to a side and will continue the irrigation on both sides in turn till to empty the container (Fig. 1 no. 3).

[0020] The advantages of the present invention consist in the possibility: to do nasal irrigation in your own home; to use it with very cheap costs and possible for everyone; to spend for the whole procedure about five minutes, a time compatible with the frantic life of everyone; to be able to be re-used so many times; to stop temporarily an irrigation and to start it again later thanks to the presence of a valve, which is easy to use, functional and very comfortable; to be easily transportable; not to weigh in any way on the environmental rubbish pollution.

[0021] Although the object of the present patent request for invention was described referring to the specified and concrete realization shown in the present document, it has not to be considered limited to the indicated details, nor to the materials or to the mentioned shapes in the description or in the drawings and the field of protection of the patent request to be considered comprehensive of the modification and of the changes which can come from the following claims:

with a pipe to let the air enter which, together with the force of gravity, by creating pressure lets the liquid to run out.

- 5 3. Device for the irrigation of the nasal cavities for home use whose at the claims no. 1 and 2, **characterized by** the fact that on the conductor pipe Roller valve is applied (Fig. 1 no. 2) which can slide along the pipe and which lets to regulates, interrupt and open again the flow.
- 10 4. Device for the irrigation of the nasal cavities for home use whose at the claims no. 1, 2 and 3, **characterized by** the fact that at the end of the conductor pipe a nozzle is applied (Fig. 1 no. 1 and Fig. 2 and 3) with a truncated-cone shape, with a hole at the centre for its whole length to let the passing through of the solution and the entering of it the nasal cavities.
- 15 5. Device for the irrigation of the nasal cavities for home use whose at the claim no. 1 **characterized by** the fact that the container is re-usable and the therapeutic solution can be taken to an optimal temperature, the necessary time for an irrigation is of about five minutes and the use cost is almost non-existent.
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Claims

1. Device for the irrigation of the nasal cavities for home use which lets the nasal hygiene, the prevention and the treatment of various nasal pathologies in your own home, by a re-usable container (Fig. 1 no. 3), kept high, hung to a hook or to a sucker or to a rod for drips (Fig. 1 no. 4), from whom through a conductor pipe (Fig. 4 no. 3a) slides the therapeutic solution which through a nozzle (Fig. 2 and 3) enter a nostril.
2. Device for the irrigation of the nasal cavities for home use whose at the claim no. 1, **characterized by** the fact that the container (Fig. 1 no. 3) is connected to a conductor pipe (Fig. 4 no. 3a) by a hole on the stopper, where there is a second hole on (Fig. 4 no. 3b)

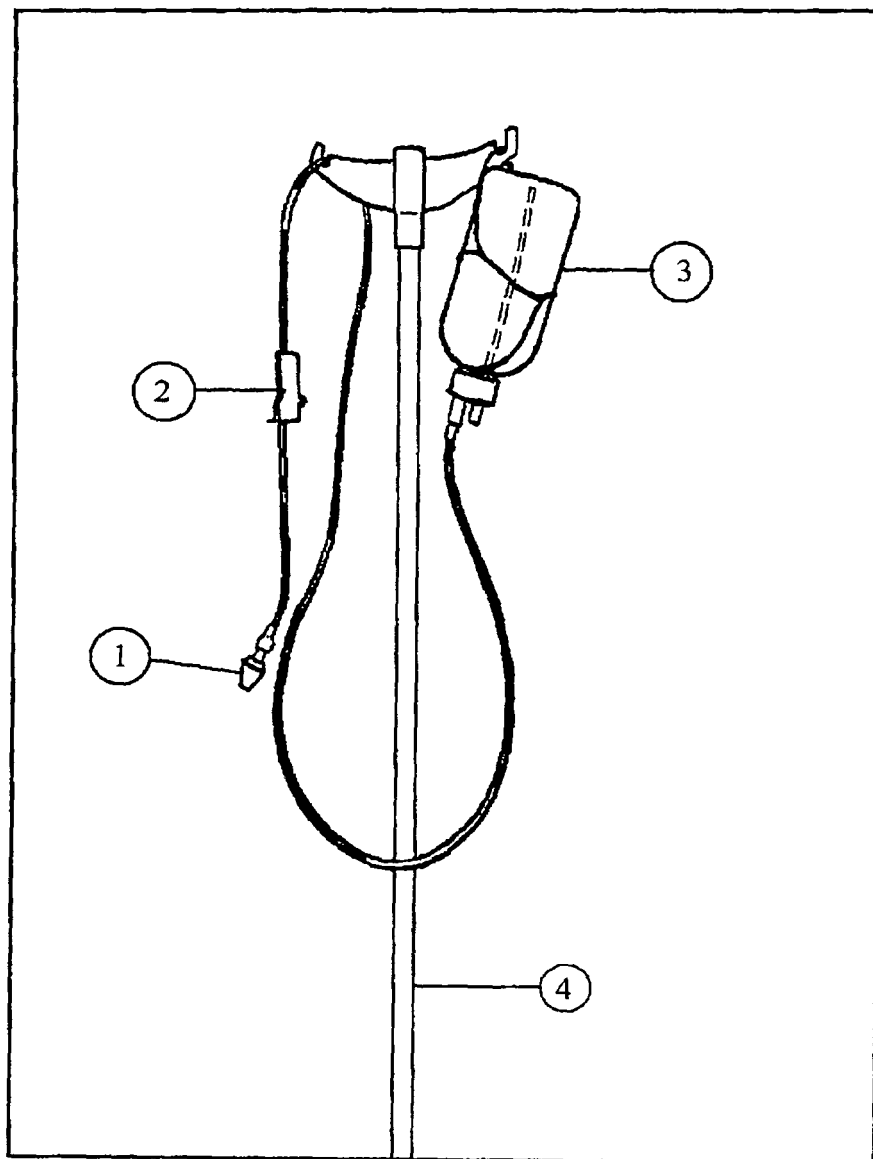


FIG. 1

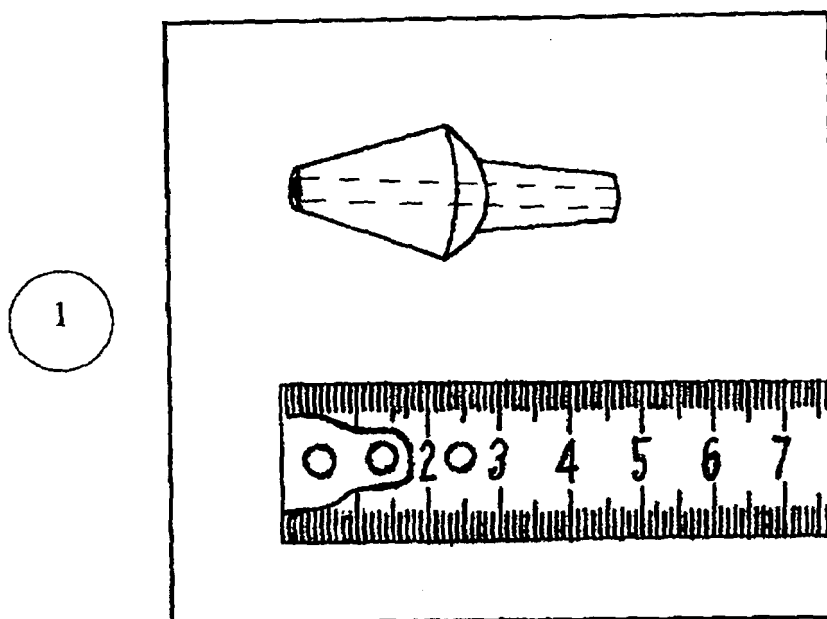


FIG. 2

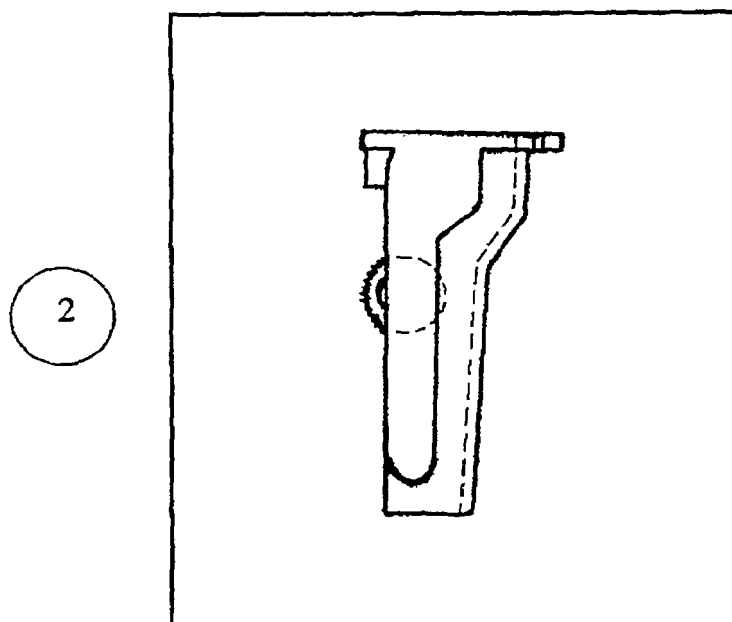


FIG. 3

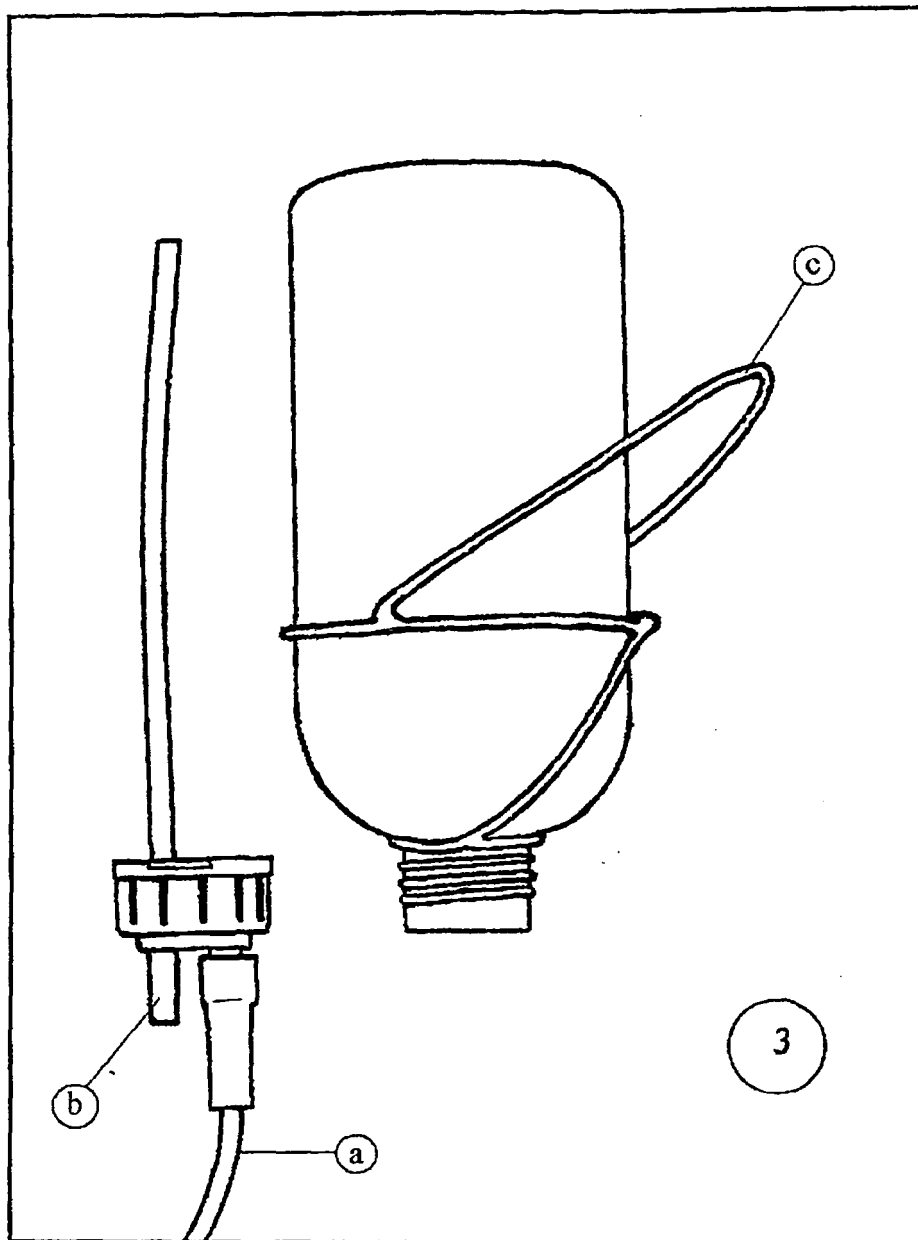


FIG. 4

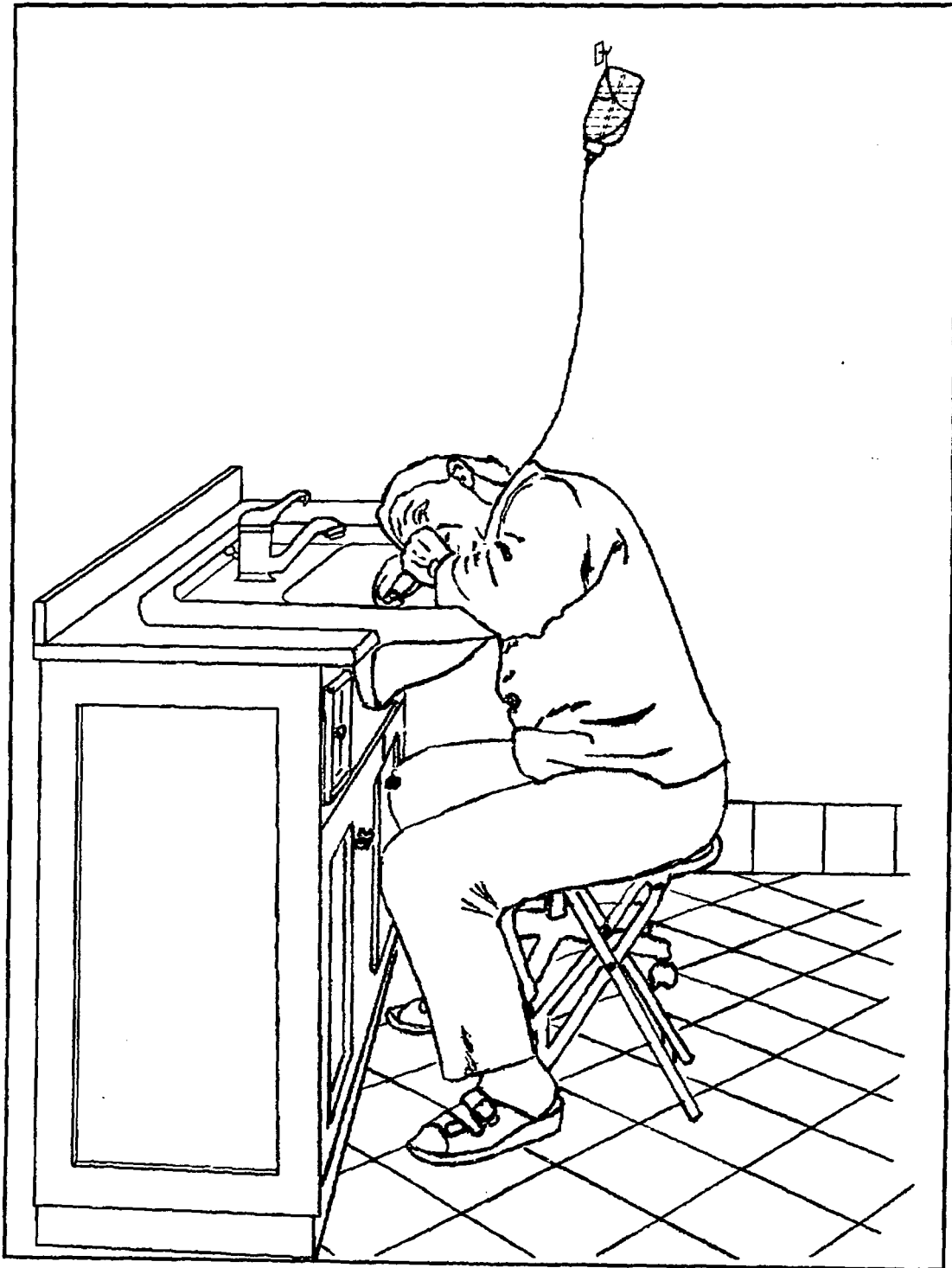


FIG. 5

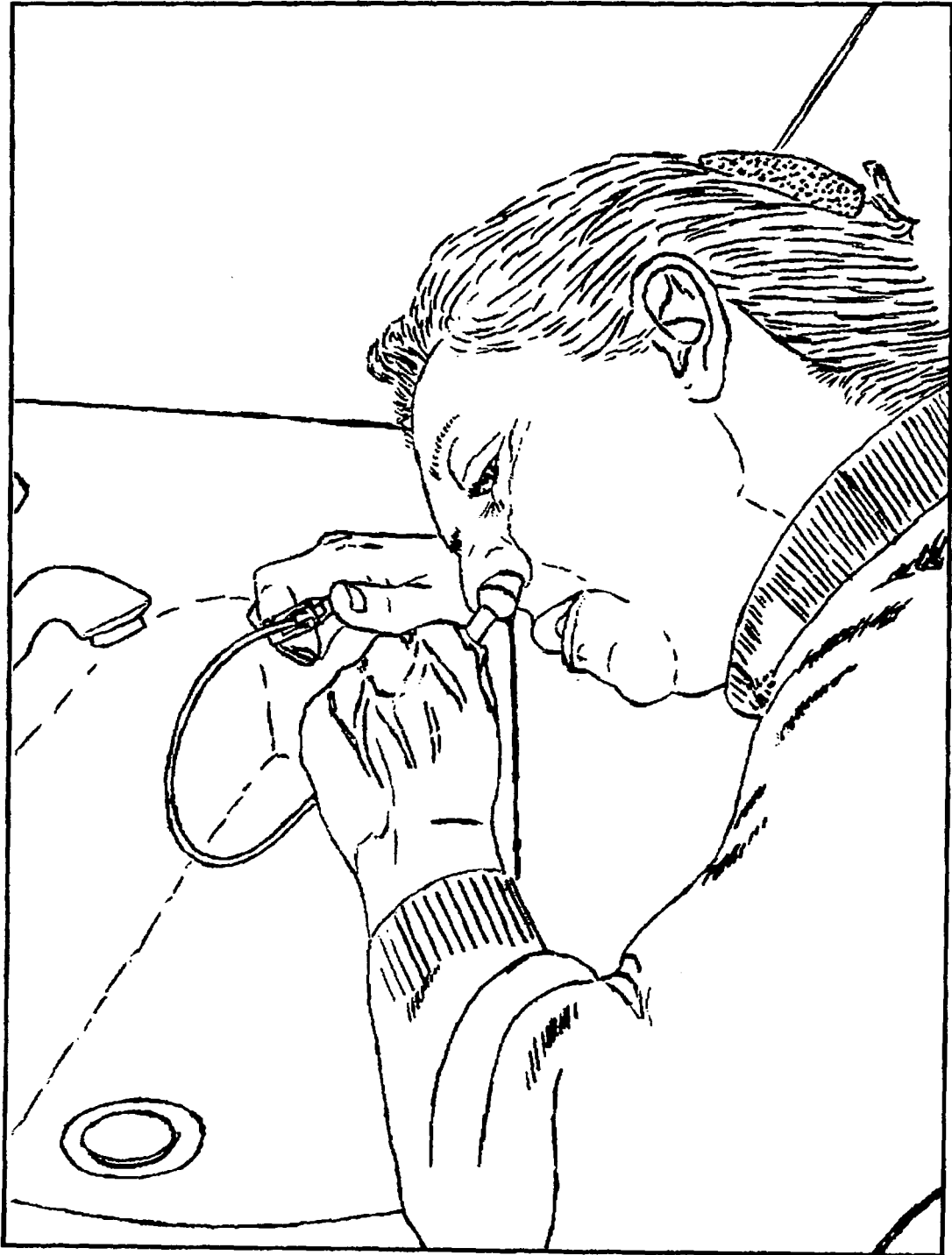


FIG. 6



EUROPEAN SEARCH REPORT

Application Number
EP 09 00 8636

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 8 October 2009	Examiner Fischer, Elmar
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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